WHY ARE THE BEACHES CLOSED?

SYNOPSIS

The management of runoff water has been the subject of several Grand Jury reports over the past decade. The most recent were the 1997-1998 San Diego Grand Jury Final report "Urban Runoff and Stormwater Management in San Diego County" and "San Diego Bay Pollution Mitigation: A Tax Payer's Viewpoint."

The cities of San Diego County have avoided establishing and implementing a plan for water runoff, the major pollutant of San Diego County's beaches, lagoons, bays, estuaries, and streams. In 1999, San Diego County experienced 720 beach closures and advisory days as a result of reported contaminated water events.

The Regional Water Quality Control Board, San Diego Region, on February 21, 2001 adopted the Municipal Permit 2001-01 that mandates the 18 cities of San Diego County, the County of San Diego, and the San Diego Unified Port District to meet the conditions required by the permit. This order sets standards for Waste Discharge Requirements of urban runoff from the municipal separate storm sewer system (MS4), draining the watersheds of the County of San Diego, the incorporated cities of San Diego County, and the San Diego Unified Port District. The provisions of this permit are to be implemented by the year 2005.

Several of the 20 Copermittees (the communities in San Diego County, the County, and the Port District) have taken steps to implement the waste discharge requirements for urban runoff from the (MS4). Others are making little, if any, effort to implement this permit. This report will show positive actions that have been taken to implement an urban runoff program (Encinitas, City of San Diego, Port District), the economic impact of the beaches to the tourist trade and other businesses, the effect of pollutants in Urban Runoff, the necessity to manage watersheds in San Diego County and the mismanagement of the current Wasterwater Department of the City of San Diego.

The Grand Jury recommends that all 20 fund the Best Management Program (BMP) to control pollution from runoff that closes ocean beaches, bays, streams, and estuaries.

BACKGROUND

Rain falling on an urban area results in both benefits and problems. The benefits are watering vegetation and area cleaning. The problem is that, as rain flows over streets, parking lots, driveways, agricultural fields and other surfaces, it picks up pollutants and carries them into the stormwater conveyance ("storm drain") system. The storm drain is designed to prevent flooding by transporting water away from urban areas. This water, and all the contaminants it contains, eventually flows to our streams, estuaries, bays, and the ocean where we swim, recreate, and fish. Once there, polluted runoff can harm wildlife, their habitat, and cause illnesses in man.

The 1972 amendments to the Federal Water Pollution Control Act (referred to as the Clean Water Act), prohibits the discharge of any pollutant to navigable waters from a source, unless the discharge is authorized by a National Pollutant Discharge Elimination System (NPDES) permit. Efforts to improve water quality under the NPDES program have traditionally focused on reducing pollutants in discharges of industrial process wastewater and municipal sewage.

With the vast improvements in pollution control of point source discharges[1] it became evident that more diffuse sources (occurring over a wide area) of water pollution, such as urban runoff, were also a major cause of water quality problems. The appropriate means of regulating storm water discharges within the NPDES program has been a matter of serious concern since implementation of the NPDES program. Each attempt to devise a workable program has been the focus of substantial controversy, because of the large number of storm water sources, the nature of the storm and irrigation water runoff, and the realities of program priorities and resources.

In 1973 the Environmental Protection Agency (EPA) published its first storm water regulations for urban runoff, provided that it was not contaminated by industrial or commercial activity. The management of the stormwater runoff was assigned to local authorities. This decision was made because of the overwhelming task of managing the thousands of storm water sources.

Many legal battles followed because of EPA's approach and NPDES issuing of permits. The outcome of these legal challenges was the final storm water regulations of the California Regional Water Quality Control Board, November 16, 1990. The regulations established requirements for the storm water permit application process.

[1] Any discernible, confined, and discrete conveyance, including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operations, landfill leachate collection systems, vessel, and other floating craft from which pollutants are or may be discharge.

Legal authority for conducting "Illicit Connection and Illegal Discharge Detection" activities in the unincorporated areas is derived from the County of San Diego Stormwater Ordinance (No. 8394) enacted in May, 1994. This ordinance prohibits non-stormwater discharges to the stormwater conveyance system, and authorizes designated county staff to enforce these provisions.

Significantly for the San Diego Region, the urban runoff has also been found to be the leading cause of ocean impairment nationwide. This was exhibited when urban storm water runoff and sanitary sewer overflows were identified as the largest causes of beach closings in the United States in recent years. Urban runoff discharges to the beaches not only impact the aquatic environment, but also pose a threat to public health. The Epidemiological Study of possible Adverse Health Effects of Swimming in Santa Monica Bay (Haile, et. al., 1996) concluded that there is a 57% higher rate of illness in swimmers who swim adjacent to storm drains, than in swimmers, who swim more that 400 yards away from storm drains. Urban runoff/storm sewers are found to be a source of pollution in 13% of impaired rivers; 21% of impaired lakes, ponds and reservoirs; 45% of impaired estuaries.

Twenty areas (18 cities, the county of San Diego and the San Diego Unified Port District) were charged by the Regional Water Quality Control Board (RWQCB) to implement Order 90-42 in 1995. They were to report regularly concerning their progress to the RWQCB. Some submitted satisfactory reports. Others were not compliant and reports were unsatisfactory.

In 1998 the RWQCB began to prepare the current Municipal Storm Water Management Tentative Order 2001-01. This tentative order was presented December 13, 2000, in a public forum. All responses, verbal and written, from the public meetings, were considered. The final permit was presented and approved on February 21, 2001.

The Municipal Storm Water Management Order 2001-01 excludes state transportation projects, Department of Defense, Indian Reservations and food producing farms (agriculture). Another permit covering these four areas will be adopted in 2003 requiring compliance in 2005.

Article J of the new Municipal Storm Water Permit for the San Diego Region mandates several "Watershed Urban Runoff Management Programs." This provision, effective 2005, may force public agencies to shift water quality management from a routine department program to a multi-city cooperative venture.

PROCEDURES

Documents reviewed by the Grand Jury:

AB411-Beach sanitation Posting, 1997;

"California Regional Water Quality Control Board, San Diego Region, Tentative Order No. 2001-01 "; February, 2001

"Consent Decree between San Diego Baykeepers (the Plaintiff) vs. City of Encinitas, Defendants"; June, 1999;

AS-1584 (proposition 13), Safe Drinking Water, Clean Waste Watershed-Protection, and Food Protection Bond Act"; 1999;

"Federal Water Pollution Act (Clean Water Act)";1972;

"National Pollutant Discharge Elimination System NPDES) permit";

"Environment Protection Agency. Storm Water Regulations"; 1973;

"San Diego Association of Government's (SANDAG) Water Quality Element, Regional Growth Management Strategy, 1999";

"California Proposition 13 (2000 Water Bond)";

"Porter-Cologne Water Quality Control Act";

"Grand Jury Brief on Sanitary Sewer Overflow Prevention, September 18, 2000";

"Review of existing Stormwater Monitoring Programs for Estimating Brite Wide Mass Emissions from Urban Runoff", Kenneth Schiff, 1996";

"California Regional Water Quality Control Board San Diego Region, Staff report for Standard Urban Storm Water Mitigation Plans (SUMWMP) and Numerical Sizing Criteria for Best Management Practices"; 1999.

"Stormwater Reporter", Finance Forum, January 2001;

"Supplemental Staff Report for Standard Urban Storm Water Mitigation Plans and Numeric Sizing Criteria for Best Management Practices", January, 2001;

"Democratic Views To the Committee Report of H.R. 1943 San Diego Coastal Corrections Act of 1995";

"California Coastal Commission's Plan for Controlling Pollutant Runoff (Coastal CPR Plan) through 2003"; January 2001;

"Procedural Guidance Manual: Addressing Polluted Runoff in the California Coastal Zone (1st edition, 1995), January 2001";

"San Diego Police Gazette"; February, 2001.

AB 411 (Wayne) " Beach Sanitation Posting", 1997

"San Diego County 200 Beach Closure and Advisory Report"; January 2001;

H.R. 3378 "Tijuana River Valley Estuary and Beach Sewage Cleanup Act of 2000;"

"Southern California Coastal Water Research Project Authority FY 2000/20001 Research Plan";

"Part 122—EPA Administered Permit Programs: The National Pollutant Discharge Elimination, Revised July 1, 1999";

"City Lights", March 15, 2001;

"The Fiscal Impact of Beaches in California", Philip King, Ph.D. Public Research Institute, San Francisco State University, Sept. 1999.

The Grand Jury reviewed materials from:

The Internet
North County Times
San Diego Union Tribune
Minutes from Regional Water Quality Control District
Minutes of SANDAG meetings

The Grand Jury attended the following meetings:

The Regional Water Quality Control District (RWQCD)
SANDAG, Regular meeting
San Diego County Public Health Laboratory

The Grand Jury conducted interviews with Representatives from:

Community Advocates
Encinitas
City of San Diego
Environmental Health
Unified Port Authority
1999-2000 Grand Jury
The Regional Water Quality Control District
Scientist
Others

Runoff Definitions:

BAT	Best Available Technology
BMP	Best Management Program
CWA	Clean Water Act
EPA	Environmental Protection Agency
HUC	Hydrologic Unit Code
MS4	Municipal separate storm sewer system
NPDES	National Pollutant Discharge Elimination System
RWQCB	Regional Water Quality Control Board
SANDAG	San Diego Association of Governments
SUMWMP	Standard Urban Storm Water Mitigation Plans
Watershed URMP	Watershed Urban Runoff Management Programs

FACTS

Pollution of the Coastal and Bay Waters of San Diego County

During the year 2000, the Environment Health Department of the County of San Diego reported 328 water-contaminated events; 47 were closures due to sewage spills and 275 from bacterial levels, identified by monitoring, that resulted in exceeding State Standards and six were General Advisories. These are issued after any rain. There were 248 closure days, 1988 advisory days, 38 General Advisory days for a total 2274 days.

Pollution prevention, the initial reduction/elimination of pollutant generation at its source, is the best "first line of defense". Pollutants that are not generated do not have to be controlled or treated.

Storm water is that portion of precipitation that flows across a surface to the storm drain system or receiving bodies of waters.

Runoff increases when perviousness of a surface decreases.

Pollutants in Urban runoff

The most common categories of pollutants in urban runoff include:

- Total suspended solids, sediment (due to anthropogenic activities);
- Pathogens (bacteria, viruses, protozoa);
- Heavy metals (copper, lead, zinc, and cadmium);
- Petroleum products and polynuclear aromatic hydrocarbons;
- Synthetic organics (pesticides, herbicides, and PCBs);
- Agricultural Fertilizers;
- Oxygen-demanding substances (decaying vegetation, animal and human waste);
- Trash;
- Silt.

AB 411 (Wayne), adopted by the legislature in 1998, requires local health officers to test waters adjacent to public beaches, within their jurisdiction, and to take related action in the event of a known sewage spill. The bill also requires the local health officer to post conspicuous warning signs and establish a telephone hotline to inform the public about a beach which fails to meet standards, developed by the Department of Health Services. As required in the bill, implementation began January 1, 1999.

Pathogens close beaches. After a five year decreasing trend (1993-1997) in the number of annual beach closures and advisories yearly totals rose in 1998 and again in 1999. The increase in closures and advisories in 1998 was primarily attributable to an increase in numbers of sewage spills caused by El Nino rains and increased number of tests performed. The continued increase in 1999, was the result of the implementation of AB411.Those pathogens that cause beaches to be closed are coliform organisms and enterococci.

Total coliform bacteria are a collection of relatively harmless microorganisms that live in large numbers in the intestines of man and warm and cold-blooded animals. They aid in the digestion of food. A specific subgroup of this collection is the fecal bacteria, the most common member being Escherichia coli. These organisms may be separated from the total coliform group by their ability to grow at elevated temperatures and are only associated with the fecal material of warm-blooded animals.

The environmental impact of all this information is that the presence of fecal coliform bacteria, in aquatic environments, indicates that the water has been contaminated by pathogens. Some "water-borne" pathogenic diseases include salmonella, typhoid fever, viral and bacterial gastroenteritis and hepatitis. The presence of fecal contamination is an indicator that a potential health risk exists for individuals exposed to this water. Fecal coliform bacteria may occur in ambient water as a result of the overflow or seepage of domestic sewage or from non-point sources of human and animal waste.

With the enactment of AB411 the state government ordered the districts to test for enterococcus because studies have shown that this type of bacteria is the best indicator that the ocean, estuaries, bays, and streams contain organisms that can make people sick.

Until this time, the sewer departments and sanitation districts typically measured only the amount of total fecal coliform found in water samples. A coliform bacterium usually dissipates in seawater in four to five days. The fact that enterococcus can exist for 20 days makes it a better tracer of pollution.

The presence of coliform bacteria in abnormal amounts is presumptive evidence of the concomitant presence of virus. Since the laboratory detection of viruses is an elaborate, costly, and time-consuming process, the results may not be known for weeks.

AB411 requires that samples shall be collected during both dry and wet weather, at both the storm drain outfall, and in the surf zone (at ankle to knee water depths) directly in front of the outfall.

The water sample at the ocean surf is collected by taking a long pole with a container on the end. There are specific protocols for handling the sample, which include the storage, transporting, and a time factor. These samples are tested in county or private certified labs. The time interval between collecting the samples until notice is posted on the beach can be as long as 36 hours. When there is a known sewage spill the beach is posted immediately and then testing follows.

The criterion for swimming is fewer than 200 colonies/100mL; for fishing and boats, fewer than 1000 colonies/100mL.

Disease-causing organisms originate above ground. Soil can be nature's water filter. Normally, after water seeps through 20 feet of soil, it is free of coliform and disease-causing organisms. When coliform bacteria show up in a water supply or the ocean a defective system is present somewhere.

Discharge water from watersheds throughout San Diego County can be treated as polluted water at a point source. The use of chlorine, ozone, ultraviolet light and distillation is not economical when treating storm water runoff that is going directly to the ocean as it is not being held in a pond.

Every watershed in San Diego County has a varying assortment of treatment facilities. These treatment facilities are the responsibility of some of the cities, the County, and the San Diego Unified Port District, and special districts. There is much variance in the function of the treatment facilities.

Watersheds in San Diego County

A watershed is the area of land where all of the water that is under it or from which it drains (runoff) percolates into the same place. Water would flow from a hilltop toward the valley, where a stream or lake might capture that water. Watersheds are referred to by their proper names as well as a Hydrologic Unit Code (HUC). Proper names are used in this report (see chart page 10).

All the communities in San Diego County share the responsibility for clean water in our lakes, streams and ocean. Recent Permit 2001-01 prepared by the RWQCB has identified specific actions that they must take within each watershed. The watershed concept is in planning and requires the cooperation of all to use their resources for the greatest good to accomplish the project. The focus is control of urban runoff pollutants and flows, which are either generated or accelerated by human activities. This order is not meant to control background or naturally occurring pollutants and flows.

The watershed and the copermittes of the 2001-01 permit are identified as follows:

Watershed	Copermittees	Receiving Water Bodies
Santa Margarita River	**County of San Diego***	Santa Margarita River,Estuary, Ocean
San Luis Rey River	City of Escondido **City Of Oceanside*** City of Vista	Batiquitos Lagoon San Elijo Lagoon Agua Hedionda Lagoon
Carlsbad	City of Carlsbad **City of Encinitas*** City of Escondido City of Oceanside City of San Marcos City of Solana Beach City of Vista County of San Diego	Buena Vista Lagoon Tribtary Streams Pacific Ocean
San Dieguito River	City of Del Mar **City of Escondido*** City of Poway City of San Diego City of Solana Beach County of San Diego	San Dieguito River and Estuary Pacific Ocean
Penasquitos	City of Del Mar **City of Poway*** City of San Diego County of San Diego	Los Penasquitos Creek Los Penasquitos Lagoon Pacific Ocean
Mission Bay	**City of San Diego***	Mission Bay, Ocean
San Diego River	**City of El Cajon*** City of La Mesa City of Poway City of San Diego City of Santee County of San Diego	San Diego River, Pacific Ocean
San Diego Bay	City of Chula Vista City of Coronado City of El Cajon City of Imperial Beach City of La Mesa City of Lemon Grove City of National City City of San Diego County of San Diego **San Diego Unified Port District***	San Diego Bay Sweetwater River Otay River Pacific Ocean
Tijuana River	**City of Imperial Beach*** City of San Diego County of San Diego	Tijuanna River and Estuary Pacific Ocean

* Bold font indicates Lead Watershed Copermittee for each Watershed

The planning and actions of each watershed management group and each œ-permittee are to be prepared using Best Management Practices (BMP's) and Best Available Technology (BAT). A BMP will include a schedule of activities, prohibitions of practices, maintenance procedures, and other management prac-

tices to prevent or reduce the pollution of waters. BMP's also include treatment practices, operating procedures and practices to control plantsite runoff, spillage, leaks, sludge or waste disposal, or drainage from raw material storage. In the case of municipal storm water permits, BMP's are typically used in place of numeric effluent numbers. [2]

A BAT is the technology-based standard established by Congress, in the Clean Water Act (CWA) section 402(p)(3)(A), for industrial discharges of storm water. Technology-based standards establish the level of pollutant reductions that discharges must achieve, typically by treatment or by a combination of treatment and BMP's.

When land is used for development of housing tracts 40% of the pervious land is lost and runoff is increased.

Watershed Urban Runoff Management Programs (Watershed URMP) will need to be developed and implemented to control pollutants in the lakes, streams, estuaries and the ocean.

There are 11 watersheds in San Diego but nine are confluent with the coastal San Diego County area.

Inspections of the backcountry and canyons has been ignored because lack of accessibility and environmental pressures prevent access roads.

The polluted runoff from the backcountry, agriculture and industrial areas is blamed on the outflow from coastal cities downstream and has resulted in fines.

Public Awareness and Activism

There is a heightened awareness on the part of the public with regard to environmental issues in general and runoff in particular.
Citizens are getting together in interest groups to promote improved environment and clean water. The cities are finding that these same citizens are joining together to file law suits.
Two environmental groups are suing the City of San Diego in federal court to decrease raw sewage spills. The suit asks the court to declare the city in violation of the federal Clean Water Act and order it to fix water contamination problems.

Three examples of implementing programs to control Urban Runoff are Encinitas, the City of San Diego, and the San Diego Unified Port District.

[2] The placing a numeric value on mitigation design criteria (e.g. size of catchment pond, area of grassland) which will result in a desirable volume of filtration or treatment of storm water after a rainfall.

- Encinitas:

A picturesque seaside community located 25 miles north of downtown San Diego; Encinitas has a population of 58,915. The city covers 26.1 square miles including 58 acres of parks and 6 miles of beaches. It shares a watershed with Carlsbad, Escondido, Oceanside, San Marcos, Solana Beach, Vista and part of the County of San Diego.

A suit was filed against the City of Encinitas by San Diego Baykeepers, which resulted in a Consent Decree with the City.

The city has agreed to the following actions:

employ full-time qualified Stormwater Program Manager and support staff.

employ a City Employee or consultant to act as a full time Environmental Health Services Officer to work towards NPDES compliance and storm-water issues.

implement and maintain an Illicit Connection/ Illegal Discharge Detection Program.

implement a Storm Water Management Program, Storm Water Pollution Prevention Plan, Urban Runoff Management Program all of which include discharge monitoring programs.

build the Leucadia Nuisance Water Drainage Project, Second Street Project, and Neptune Drainage Project.

update its Master Drainage Map.

implement an "Alien Encampment Clean-up Program" as part of the City's "Private Property Assistance Clean-up Program."

increase its city-wide street sweeping budget.

develop sufficient and adequate BMPs for all Public Works yards.

request one million dollars in federal funding for storm water management BMPs.

purchase and use a Vactor Truck to clean storm drains and catchment basins at regular intervals..

- The City of San Diego

The City of San Diego has the 7th largest population of all cities in the U.S. (January 1999). The local climate approaches perfection. The City is guardian to many major surface water areas including San Dieguito River and Estuary, Pacific Ocean, Los Penasquitos Lagoon, Mission Bay, San Diego Bay, Sweetwater River, Otay River and Tia Juana River and Estuary.

The City of San Diego has shown good faith efforts by taking the following steps:

the Mayor has declared the control of Stormwater Runoff as his 4th priority for the city;

the Mayor has pledged that Stormwater runoff will be reduced 50% within four years;

the General Services Director has been identified to oversee the Storm-water Program and assure the residents of the City that there will be con-trol of Stormwater Runoff;

employed a Stormwater Consultant, five field engineers, and additional support staff;

budgeted 1.5 million dollars for the Stormwater Runoff project and requested another 1.5 million dollars;

reassigned 50 engineers, during a rain, whose jobs are to go into the field to look for hot spots(history of sewage leakage and overflow of ponds);

partnered with other agencies (Environmental, Water Quality, Public Works, Etc.);

employ a full-time Grant Writer;

is establishing cross jurisdictional management plans;

lobbied in Sacramento for 2 million dollars in 1999-2000.

- Port District

The San Diego Unified Port District, an autonomous public agency, was estab-lished on December 18, 1962 in accordance with state laws, for acquisition, con-struction, operation, maintenance, development, management, and regulation of

harbor works and improvements. This includes rail, water, air terminal facilities, man-made islands, and submerged lands of the Harbor of San Diego and San Diego Bay. It promotes commerce, navigation, fisheries and recreation. The department manages over 1,800 acres of tidelands and submerged lands that are designated by the Port Master Plan for conservation.

The San Diego Unified Port District has been involved in environmental concerns for many years. The San Diego Bay is the end-point for stormwater runoff for greater than 50% of the regions population. Stormwater is the greatest contributor to the contamination of the Bay. The Board of Port Commissioners has directed the development of a Comprehensive Stormwater Management Program that will seek to identify and control the discharge of contamination into the Bay.

The Port Authority has on staff a Director of Environmental Affairs and a Stormwater Runoff Manager who is presently developing a Stormwater Management Program.

State Agencies

Caltrans has agreed to improve its existing storm water management system by conducting better storm drain maintenance, pilot testing retrofits for existing highways, and improving practices at its maintenance yards.

Caltrans also agreed to restore a wetland and pay a $430,000 penalty to settle alleged violations of the Clean Water Act's stormwater requirements.

The California Legislature has not always been as supportive to measures that relate to runoff. AB 1835-Baugh (funding for storm water diversions); AB 1909-Jackson and AB 2148-Kuehl and Nakano (funding for reduction of storm runoff from state and local roads) did not pass.

The Grand Jury's research found that California State standards are stricter then National Standards for Urban Water Runoff.

Financing

Financing the municipal separate storm sewer system (MS4) program (including SUSMPs and numeric sizing criteria) offers a considerable challenge for municipalities. Continued efforts to identify new funding sources are needed. One proven successful financing mechanism is the establishment of a storm water utility. Utility fees, which are assessed on the property owner, based on some estimate of storm water runoff generated from the site, are predictable incentives to commercial and industrial property owners to reduce impervious surface areas. Such incentives offer flexibility to property owners to choose economic options-paying more fees or improvements to reduce runoff from the site.

Stormwater Runoff and the Wastewater Department –Management

During the Grand Juries' investigation of Urban Runoff it quickly became apparent that the major cause of polluted waters in San Diego County is sewage spills.

The Director of Metropolitan Wastewater Department, during an interview, testified to the Grand Jury that the condition of the sewer system in the City of San Diego was well under control. The Director gave assurances that there was sufficient money budgeted until 2010 to replace old and defunct infrastructure of the sewer system. A plan for ongoing maintenance was in place. Yet, spillage events have raised questions about the sewer system, maintenance, and management.

Total volume of spills to the Pacific Ocean in 2000 was 34,058 gallons. The five previous years, altogether, had total spills of 17,098 gallons. The greatest percentage of causes of sewage spills during the time period of 1995 to 2000 was from grease and roots obstructing flow. During 2000 the grease-related spills, were comparable to 1999 while the instances of root-related spills have increased by 21% in 1999 and 86% in the first half of 2000.

In a report of April 5, 2000 the Metropolitan Wastewater Director lists a 133,800 gallon spill in to Penasquitos Lagoon because a 21-inch sewer main collapsed. This was due to undetected damages occurring in a relatively new pipeline installed in 1984. A 34,000,000-gallon spill went undetected for a week in a remote area near Adobe Falls. Also, 493,000 gallons spilled into San Diego Bay from a vandalized manhole.

With each of these spills there was some excuse that the reasons were beyond the controls of the Metropolitan Wastewater Department when in fact the size of the spills was directly related to the inadequacy of the department.

The Metropolitan Wastewater Director reported that a state-of-the-art system has been installed that will provide an early warning signal of unanticipated major fluctuations in trunk sewer flows. Telemetering is received from various points on certain trunk sewers throughout the collection system. (Meters measure volumes of expected flow). He also stated in his testimony that routine physical monitoring is being implemented on trunk sewers, and increased monitoring takes place following rain events.

In the year 2001, March 2, the Grand Jury learned that a 1.5 million gallon undetected spill was reported by an engineer of the San Diego Regional Water Control Board to the Metropolitan Wastewater Department. This spill was not acted on for ten days and was allowed to run into Tecolote Creek, emptying into Mission Bay, resulting in the closure of Mission Bay for recreational purposes.

Tecolote Creek is a known problem area as reported to the Grand Jury by the General Services Director, who is responsible for the Stormwater Runoff program. When it rains, 50 Inspector/Engineers are called from their regular jobs and sent into the field to make rounds of the hot spots and collect test samples. When sewage water is not running through a pipe, it is not hard to figure something up-line is blocking the pipe. The overflow seeps into the ground and thence into storm water runoff. It does take 24 hours to run a test for pathogens but when the test is not run for a known and recognized spill something is wrong with management. The same things seem to be happening, year in and year out, to a very fragile part of San Diego, Mission Bay.

There have been additional spills during the past few years that are large and have gone undetected for an inordinate amount of time, causing excessive closures of beaches. These should have been corrected more quickly. This suggests the poor management of the Wastewater/Sewer and Stormwater Runoff Management programs in the City of San Diego.

The Grand Jury believes that the Wastewater Management Department has adequate funding until 2010 to maintain and replace sewers in the city. Someone is not out there, on the front lines, checking all the many places that have to be watched when it rains and the "first flush" fills up the treatment basins.

FINDINGS

1. **Pollution of the Coastal and Bay Waters of San Diego County**

    a. Beach closures are excessive.

    b. When land is developed stormwater runoff increases because there is less land to absorb water.

    c. As man made structures cover more land there is less land for natural water seepage. Natural water seepage of 20 feet can result in water which is free of coliform organisms.

2. **Pollutants in Urban Runoff**

    a. Pathogens close beaches. These pathogens are identified from sample testing of coliform bacilli and enterococci.

    b. Some water-born pathogenic diseases include salmonella, typhoid fever, viral and bacteria gastroenteritis and hepatitis.

    c. Testing for enterococcus is now required which has a 20-day incubation period before it shows up in a culture medium.

d. The proper protocol for the collections of water samples is fundamental and is potentially subject to numerous errors. The time between the sample taken and closing the beach is 24 to 36 hours.

e. It is costly to treat stormwater as it goes directly in the oceans, lakes, and streams.

f. During the year 2000 there is estimated to have been 39,635, 858 visits to Ocean Beaches including Mission Bay. The economic impact of these visits is direct and local as well as indirect and extended.

g. Local residents not only spend money to enjoy beach-time; they also spend money in nearby communities as a result of traveling to and from the beach. This is especially true of the out of town visitors.

h. The following monetary numbers are extrapolated from " The Fiscal Impact of Beaches in California", Public Research Institute, San Francisco State University, September 1999.

i. Direct revenues estimated for the year 2000 at the beaches in San Diego County-$5.75 Million

j. Direct, indirect, and induced revenues estimated for the year 2000 at the beaches in San Diego County-$3 Billion.

3. Watersheds in the County of San Diego

a. A Watershed URMP requires four disciplines for proper management:

- Hydrolics (the chemical reaction in which a compound reacts with the ions of water);
- Hydrology (The science of dealing with the waters of the earth their distribution on the surface and underground and the cycle involving evaporation, precipitation, and flow to the ocean);
- Water Chemistry.
- Aquatic Ecology (fauna and flora)

b. Nine of the watersheds in San Diego County drain into the ocean, bays, and some lakes.

c. Watershed responsibility is shared with the copermittees of the watershed.

d. Development of BMP's and BAT's will need to demonstrate to the RWQCB that proper management techniques are in position.

e. Development and implementation of containment for stormwater runoff is best planned within the entire watershed.

f. Watershed URMP needs to be developed and implemented to control pollutants in the lakes, streams, and the ocean.

g. Grease and roots cause the greatest number of spills.

h. The back country and canyons are not monitored routinely, cleaned, and trees and brush removed from around the conduits.

i. The total number of spills has not varied significantly but the volume of the spills has increased considerately.

4. Public Awareness and Activism

a. Solving the stormwater runoff problem requires the residents, tourists, and other visitors of the County of San Diego to be involved. Three examples of implementing programs to control Urban Runoff are Encinitas, the City of San Diego and the San Diego Unified Port District.

b. The model should be encouraged to set examples for all others.

c. Citizens are joining together to identify problems and to finally do something.

5. Stormwater Runoff and the Wastewater Department-Management

a. The total volume of polluted stormwater spills into the Pacific Ocean has increased in the past two years.

b. Considerable funds have been spent for current mechanism to detect sewage spills.

c. Tecolote is a known problem area.

d. Known problem areas are not monitored effectively after a rain.

e. The Metropolitan Wastewater Department is not operating in an effective and productive manner.

f. Wastewater Management does not accept responsibility for the spills.

RECOMMENDATIONS

That the 20 (18 cities, The County, Port District)

01-146: employ at least one full-time person qualified by training and experience in the minimum of the nine identified watersheds to establish, implement, and effect the requirements of RWQCB, Ordinance 2001-01;

01-147: design, create, fund, and implement a Storm Water Management Program, Storm Water Pollution Plan, Urban Runoff Management Plan, or equivalent, which includes a comprehensive and representative storm water/urban runoff discharge monitoring program;

01-148: to establish a common plan of work to manage runoff, in their individual communities to involve Departments of Public Works (water, sewer, streets), Planning, Finance, Police and Sheriff, and Harbor and Beach;

01-149: explore outside funding of programs (such as grants) which will reduce the number of beach closures.

01-150: prepare mitigation procedures for a land developer to replace the 40% of open ground that is lost from natural absorption of urban runoff due to construction.

That the Lead Watershed Permittee :

01-151: identify locations of frequent sewage spills (hot spots) and establish a procedure for checking these areas at all times and particularly during and following a rain.

That The City of San Diego Metropolitan Wastewater Department:

01-152: develop a program to put more people in the field to monitor the known "hot spots" in the sewer system to avoid the totally unnecessary spills that have occurred in the past years. Manpower can be more effective when used in conjunction with meters and telemeters.

01-153: provide ways to make wastewater runoff conduits accessible to human inspection in the backcountry and up canyons.

01-154: work with Stormwater Management to share information in a timely manner.

01-155: employ an educational consultant to develop a curriculum for schools and communities. This curriculum will emphasize each citizen's responsibility concerning the Management of Urban Runoff Waters.

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That The San Diego County Board of Supervisors:

01-156: develop a Stormwater Utility to generate the revenue for Urban Stormwater Runoff programs.

REQUIREMENTS AND INSTRUCTIONS

The California Penal Code §933(c) requires any public agency which the grand jury has reviewed, and about which it has issued a final report, to comment to the Presiding Judge of the Superior Court on the findings and recommendations pertaining to matters under the control of the agency. *Such comments shall be submitted no later than 90 days after the grand jury submits its report to the public agency.* Also, every ELECTED county officer or agency head for which the grand jury has responsibility shall comment on the findings and recommendations pertaining to matters under the control of that county officer or agency head, as well as any agency or agencies which that officer or agency head supervises or controls. *Such comment shall be made within 60 days to the Presiding Judge of the Superior Court with an information copy sent to the Board of Supervisors.*

Furthermore, California Penal Code §933.05(a), (b), (c), details, as follows, the manner
in which such comment(s) are to be made:

(a) As to each grand jury finding, the responding person or entity shall indicate one of the following:

(1) The respondent agrees with the finding
(2) The respondent disagrees wholly or partially with the finding, in which case the response shall specify the portion of the finding that is disputed and shall include an explanation of the reasons therefor.

(b) As to each grand jury recommendation, the responding person or entity shall report one of the following actions:
(1) The recommendation has been implemented, with a summary regarding the implemented action.
(2) The recommendation has not yet been implemented, but will be implemented in the future, with a time frame for implementation.
(3) The recommendation requires further analysis, with an explanation and the scope and parameters of an analysis or study, and a time frame for the matter to be prepared for discussion by the officer or head of the agency or department being investigated or reviewed, including the governing body of the public agency when applicable. This time frame shall not exceed six months from the date of publication of the grand jury report.
(4) The recommendation will not be implemented because it is not warranted or is not reasonable, with an explanation therefor.

(c) If a finding or recommendation of the grand jury addresses budgetary or personnel matters of a county agency or department headed by an elected officer, both the agency or department head and the Board of Supervisors shall respond if requested by the grand jury, but the response of the Board of Supervisors shall address only those budgetary or personnel matters over which it has some decision making authority. The response of the elected agency or department head shall address all aspects of the findings or recommendations affecting his or her agency or department.

Comments to the Presiding Judge of the Superior Court in compliance with the Penal Code §933.05 are required from the:

20 (18 Cities, County of San Diego San Diego Unified Port District)	**Recommendations: 01-146 through 01-150**
Lead Watershed Permittee:	**Recommendation: 01-151**
Metropolitan Wastewater City of San Diego	**Recommendations: 01-152 through 01-155**
San Diego County Board of Supervisors	**Recommendation: 01-156**